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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,299	02/06/2004	Hiroyuki Kagawa	520.38252CC2	4926
20457	7590	09/09/2005	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			HON, SOW FUN	
			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/772,299

Applicant(s)

KAGAWA ET AL.

Examiner

Sow-Fun Hon

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/512,475.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/06/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1-7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2, 19-20, 23,25 of U.S. Patent No. 6,423,385. Although the conflicting claims are not identical, they are not patentably distinct from each other because the examined claims encompass the conflicting claims, wherein a negative anisotropy meets the examined limitation of dielectric anisotropy of less than or equal to 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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2. Claims 1,3 are rejected under 35 U.S.C. 102(b) as being anticipated by Ilcisin (US 5,414,440).

Ilcisin teaches a liquid crystal display device comprising: a pair of substrates (24, 26, column 6, lines 10-20); a liquid crystal layer (column 28, lines 21-25) filled between said pair of substrates; and a plurality of pixel electrodes (column electrodes 20, column 7, lines 65-70) and common electrodes formed on one of the substrates (reference electrodes 162a connected to a common electrical reference potential, column 8, lines 3-15) for supplying an electric field to said liquid crystal layer, wherein said liquid crystal layer has a dielectric anisotropy $\Delta\epsilon$ of less than about 1.0 (column 6, lines 25-30), which is within the claimed range of $\Delta\epsilon \leq 1$, and being the only liquid crystal layer component disclosed, is a constituent component of 100 % weight percentage of the liquid crystal layer. A liquid crystal display configuration with a response time between a lowest brightness level and a highest brightness level, or between grey levels, of less than 16.7 millisecond, is expected because Ilcisin teaches that a data setup period of less than 1.0 microsecond is achieved.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ilcisin (US 5,414,440), as applied to claims 1, 3 above.

Ilcisin teaches a liquid crystal display device comprising: a pair of substrates; a liquid crystal layer filled between said pair of substrates; and a plurality of pixel electrodes and common electrodes formed on one of said pair of substrates for supplying an electric field to said liquid crystal layer, wherein the liquid crystal display device is configured so that a response time between a lowest brightness level and a highest brightness level, or between grey levels, is less than 16.7 ms, and wherein said liquid crystal layer contains 100 % weight percentage of a constituent component with a dielectric anisotropy of $\Delta\epsilon \leq 1$, as described above.

Regarding claim 5, because Ilcisin teaches that the liquid crystal layer has a dielectric anisotropy $\Delta\epsilon$ of less than about 1.0 (column 6, lines 25-30), which is within the claimed range of $\Delta\epsilon \leq 1$, and that the birefringence Δn is less than 0.08 (column 6, lines 25-30), it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have satisfied the claimed condition of $\Delta n / \sqrt{\Delta\epsilon} \leq 5.5 \times 10^{-2}$ when the birefringence Δn is close to 0 or when $\Delta\epsilon$ is a large negative number, within the requirements of Ilcisin, in order to provide the desired combination of optical isotropy and negative dielectric anisotropy for the desired display characteristics.

Regarding claims 6-7, although Ilcisin fails to specify the thickness of the liquid crystal layer, and hence a distance L between said pixel electrodes and said common electrodes, because Ilcisin teaches that the thickness is not sufficiently great as to affect the switching speed of the liquid crystal layer (column 9, lines 55-56), it would have

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been obvious to one of ordinary skill in the art at the time the invention was made, to have provided a thickness of the liquid crystal layer, and hence a distance L between said pixel electrodes and said common electrodes, which satisfies the condition of $L \times \Delta n / \sqrt{\Delta \epsilon} \leq 0.55 \mu\text{m}$, or $L \times \Delta n / \sqrt{\Delta \epsilon} \leq 0.4 \mu\text{m}$, in order to maintain the fast switching time of the liquid crystal layer.

4. Claims 2, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ilcisin (US 5,414,440) as applied to claims 1, 3 above, and further in view of Fergason (US 5,132,815).

Ilcisin teaches a liquid crystal display device comprising: a pair of substrates; a liquid crystal layer filled between said pair of substrates; and a plurality of pixel electrodes and common electrodes formed on one of said pair of substrates for supplying an electric field to said liquid crystal layer, wherein the liquid crystal display device is configured so that a response time between a lowest brightness level and a highest brightness level, or between grey levels, is less than 16.7 ms, and wherein said liquid crystal layer contains 100 % weight percentage of a constituent component with a dielectric anisotropy of $\Delta \epsilon \leq 1$, as described above.

Ilcisin fails to teach that the component with a dielectric anisotropy of $\Delta \epsilon \leq 1$ is less than 100% weight percentage of the liquid crystal layer, specifically within the range of 40% to 90%.

Fergason teaches a liquid crystal color display device where dyes are added to the liquid crystal to provide color transmission (abstract). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have

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provided additional constituent components to the liquid crystal layer of Ilcisin, such as dyes so that the component with a dielectric anisotropy of $\Delta\epsilon \leq 1$ is within the claimed range of 40% to 90%, in order to provide a liquid crystal color display device, as taught by Fergason.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Hon

Sow-Fun Hon

09/06/05

Harold Pyon
HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

9/6/05